Results of Double-star Measures with the 8-inch Equatorial at Windsor, New South Wales, in 1895.

By John Tebbutt.

Ref. No.	Star.	Observed Magnitudes.	Approx. Place of Star 1895·0. R. A.	Dec. S.	Fraction of Year.	Position Angle.	No. of Obs.	Distance.	No. of Obs.	Mag. Power.	Eyes.	Hour-angles.		Weight, 1 to 5
			h m	° ′		°		″				h m	h m	
1	*p* Eridani	6, 6	1 36	56 44	·830	225·5	10	7·64	8	300	R	3 4 E	2 31 E	3
2	,,	...	,,	,,	·871	223·5	10	...	...	300	P	0 53 E	0 35 E	4
3	,,	...	,,	,,	·931	225·1	10	...	...	300	R	0 37 E	0 17 E	3
4	,,	...	,,	,,	·936	222·6	10	7·41	6	300	P	1 13 E	0 42 E	2
5	,,	6, 6	,,	,,	·977	225·1	10	7·61	6	300	R	3 25 W	3 53 W	4
6	,,	6, 6	,,	,,	·983	224·4	10	7·41	6	300	R	1 12 W	1 37 W	3
7	,,	6, 6	,,	,,	·988	224·8	10	7·38	7	300	R	2 9 W	2 39 W	3
8	,,	6, 6	,,	,,	·997	225·3	10	7·35	7	300	R	2 17 W	2 40 W	4
9	Lacaille 2145	6, 6	6 2	48 27	·257	28·5	10	1·55	4	300	P	3 0 W	3 37 W	4
10	,,	6, 6	,,	,,	·260	29·7	10	1·86	7	300	P	3 6 W	3 35 W	5
11	,,	...	,,	,,	·263	29·3	6	...	...	300	P	3 54 W	4 23 W	3
12	,,	...	,,	,,	·266	30·2	10	...	...	300	P	3 46 W	4 1 W	4
13	,,	...	,,	,,	·301	30·6	10	...	...	300	P	3 59 W	4 22 W	3
14	,,	7, 7	,,	,,	·304	31·4	10	1·50	6	300	P	3 41 W	4 9 W	4
15	Stone 4019	6, 8	7 54	47 36	·266	27·5	10	0·8	Est.	300	P	2 21 W	2 52 W	3
16	δ Argûs	3, 6	8 42	54 19	·285	156·1	8	...	...	535	...	1 38 E	1 10 E	

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			h m	° ′		°		″				h m	h m	
17	δ Argûs	4, 7	8 42	54 19	·301	165·7	10	...	...	535	P	3 22 W	3 48 W	4
18	,,	3, 8	,,	,,	·449	157·3	10	...	...	535	P	1 36 W	2 19 W	5
19	,,	3, 8	,,	,,	·457	162·4	10	...	...	535	P	4 17 W	4 43 W	4
20	α Crucis	...	12 21	62 31	·320	117·9	10	4·90	7	535	R	2 11 E	1 45 E	4
21	,,	...	,,	,,	·334	117·6	7	...	...	535	R	1 55 E	1 18 E	3
22	γ Centauri	5, 5	12 36	48 23	·288	356·0	10	1·87	7	300	P	2 30 E	2 3 E	4
23	,,	...	,,	,,	·301	355·2	10	2·06	7	300	P	1 23 E	0 56 E	4
24	,,	...	,,	,,	·304	356·3	10	...	...	300	P	2 9 E	1 27 E	4
25	,,	...	,,	,,	·304	355·8	10	1·60	10	535	P	2 9 E	1 27 E	4
26	,,	...	,,	,,	·307	356·7	10	1·53	10	535	...	3 1 E	2 29 E	4 & 3
27	,,	...	,,	,,	·315	356·0	10	...	...	300	P	3 19 E	2 31 E	5
28	,,	...	,,	,,	·315	355·4	10	...	...	535				
29	,,	...	,,	,,	·318	356·7	10	1·69	7	535	P	1 54 E	1 28 E	5 & 4
30	,,	...	,,	,,	·320	356·1	10	1·68	6	300	P	2 54 E	2 33 E	4
31	,,	...	,,	,,	·444	357·6	10	...	...	535	R	0 53 W	1 17 W	4
32	,,	5, 5	,,	,,	·457	358·8	10	1·84	7	535	R	1 2 W	1 49 W	4
33	γ Virginis	...	12 36	0 52	·320	149·8	10	5·74	7	300	P	1 34 E	1 6 E	5
34	,,	...	,,	,,	·397	149·9	10	6·15	6	300	P	0 59 E	0 35 E	4
35	β Muscæ	...	12 40	67 32	·288	335·4	10	1·60	7	300	P	3 26 E	2 51 E	3

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			h m	° ′		°		″				h m	h m	
36	β Muscæ	4½, 4½	12 40	67 32	·301	340·0	10	...	...	300	R	2 5 E	1 44 E	3
37	,,	4½, 4½	,,	,,	·304	340·0	10	...	...	300	R	1 20 E	1 1 E	3
38	,,	...	,,	,,	·307	337·8	10	...	...	300				
39	,,	...	,,	,,	·307	335·5	10	1·23	7	535	...	3 53 E	3 12 E	4
40	,,	...	,,	,,	·444	335·1	10	...	...	300	P	1 36 W	1 56 W	3
41	,,	...	,,	,,	·457	337·0	10	...	...	535	P	1 59 W	2 27 W	4
42	α Centauri	...	14 33	60 24	·397	207·4	10	20·98	6	300	P	2 25 E	1 57 E	3
43	,,	...	,,	,,	·400	207·6	10	20·82	10	300	P	2 54 E	2 20 E	4
44	,,	...	,,	,,	·444	207·9	10	21·18	10	535	P	4 33 E	4 4 E	5
45	,,	...	,,	,,	·446	208·0	10	20·89	10	535	P	3 5 E	2 23 E	4
46	,,	1, 3	,,	,,	·449	207·4	10	...	...	300	P	4 36 E	4 25 E	5
47	,,	...	,,	,,	·452	207·6	10	21·00	5	535	P	4 19 E	3 57 E	5
48	,,	...	,,	,,	·452	207·4	10	...	...	535	P	1 35 E	1 15 E	4
49	,,	1, 3	,,	,,	·457	207·7	10	20·89	8	535	P	2 18 E	1 47 E	5
50	,,	1, 3	,,	,,	·487	207·9	6	...	...	535	P	3 24 E	3 9 E	4
51	,,	1, 2	,,	,,	·630	208·5	10	20·78	8	300	R	2 24 W	2 57 W	3
52	,,	...	,,	,,	·690	208·1	10	21·00	10	300	R	2 15 W	2 43 W	3
53	,,	1, 2	,,	,,	·701	207·9	10	...	...	300	R	4 18 W	4 35 W	2
54	,,	1, 3	,,	,,	·717	208·3	10	21·07	10	300	R	2 33 W	3 0 W	4

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55	α Centauri	...	14 33	60 24	·723	207·8	6	...	...	300	P	4 55 W	5 10 W	4
56	,,	...	,,	,,	·726	207·6	10	...	...	300	R	1 12 W	1 30 W	2
57	,,	...	,,	,,	·737	207·9	10	21·11	10	300	R	2 21 W	3 0 W	4
58	π Lupi	5, 5	14 58	46 38	·307	87·7	10	...	...	535	R	4 11 E	3 40 E	3
59	,,				·307	87·0	10	...	...	300				4
60	,,	$4\frac{1}{2}$, $4\frac{1}{2}$	,,	,,	·318	87·7	10	1·53	6	300	R	3 41 E	3 18 E	4
61	,,	5, 5	,,	,,	·630	86·4	10	1·64	8	300	R	2 55 W	3 24 W	4
62	,,	5, 5	,,	,,	·633	86·7	10	1·66	5	300	P	1 23 W	1 58 W	4
63	ρ Ophiuchi	6, 7	16 19	23 12	·742	354·5	10	3·33	7	300	P	2 53 W	3 17 W	3
64	36 Ophiuchi	...	17 9	26 27	·742	195·3	10	4·72	6	300	R	1 3 W	1 26 W	4
65	Brisbane 6556	6, 6	18 54	37 12	·739	281·6	10	12·71	5	300	P	1 52 W	2 15 W	4
66	,,	...	,,	,,	·742	281·3	10	12·67	5	300	R	2 26 W	2 49 W	4 & 3
67	Lacaille 7924	8, 8	,,	63 56	·783	290·5	10	1·51	6	300	P	3 8 W	3 30 W	4 & 3
68	,,	8, 8	,,	,,	·786	288·9	10	...	...	300	P	2 2 W	2 28 W	2
69	,,	8, 8	,,	,,	·789	289·6	10	...	...	300	P	2 5 W	2 31 W	3
70	γ Coronæ Aust.	...	18 59	37 13	·717	162·5	10	...	...	300	R	1 20 W	1 43 W	3
71	,,	...	,,	,,	·737	161·4	10	1·67	10	300	P	2 2 W	2 33 W	4
72	,,	6, 6	,,	,,	·739	163·2	10	1·64	8	300	R	1 6 W	1 40 W	3
73	,,	6, 6	,,	,,	·742	161·7	10	1·46	8	300	P	1 50 W	2 13 W	4

Ref. No.	Star.	Observed Magnitudes.	Approx. Place of Star 1895·0. R. A.	Dec. S.	Fraction of Year.	Position Angle.	No. of Obs.	Distance.	No. of Obs.	Mag. Power.	Eyes.	Hour-angles.		Weight, 1 to 5.
			h m	° ′		°		″				h m	h m	
74	γ Coronæ Aust.	...	18 59	37 13	·783	161·3	10	1·77	10	300	P	2 9 W	2 37 W	4
75	,,	...	,,	,,	·789	159·4	10	...	...	300	P	2 41 W	3 1 W	3
76	θ Indi	5, 7	21 12	53 53	·871	281·8	10	4·45	7	300	P	2 8 W	2 37 W	4
77	,,	5, 8	,,	,,	·917	283·1	10	4·45	8	300	R	3 47 W	4 16 W	2
78	θ Gruis	4½, 8	23 1	44 10	·830	29·3	10	...	...	300	R	1 19 E	0 58 E	2
79	,,	...	,,	,,	·871	31·0	10	...	...	300	P	1 1 W	1 30 W	4
80	,,	...	,,	,,	·936	21·1	10	...	...	300	P	2 14 W	2 38 W	1
81	,,	4, 8½	,,	,,	·947	19·7	12	1·66	7	300	P	2 51 W	3 19 W	3
82	,,	4, 8½	,,	,,	·961	31·2	10	...	...	300	R	3 20 W	3 48 W	2

Remarks.

In the column headed "Eyes" P denotes that the line joining the observer's eyes was parallel to that joining the components, and R that these lines were at right angles. The column headed "Hour-angles" gives the hour-angles between which the measures were made, and that headed "Weight" gives the value of each result on a scale of 1 to 5, 1 denoting the worst and 5 the best possible conditions.

The *following* component of No. 1 was the brighter. The components of Nos. 2, 3, 22, 27, 28, 30, 36, 60, 62, 65, 67, 68, 69, 70, 71, 72, 73, 74, 75, were noted to be equal. The south component of Nos. 9, 10, 35 was probably the brighter. The measures of Nos. 15, 16, 17, 18, 19, 78, 79, 80, 81, 82, were extremely difficult; the discrepancies in the results are due to the great inequality of the components and the faintness of the companions. Nos. 16 and 18 were measured in twilight; 44, 52, 64, partly in sunlight and partly in twilight; and 46, 47, 50, 54, 56, 57, in sunlight. Of No. 76 the primary was white and the companion blue, and of No. 78 the primary was yellowish and the companion bluish.

Windsor, N.S. Wales: 1896 *January.*

Results of Micrometer Measures of Double Stars made with the 28-inch Refractor at the Royal Observatory, Greenwich, in the years 1894 and 1895.

(*Communicated by the Astronomer Royal.*)

The measures were made with a bifilar position micrometer on the 28-inch refractor. The power generally used was 670, but a power of 1030 was used when observing close pairs, and when the definition permitted. A blue glass shade was employed to diminish the light and irradiation, when bright stars were observed. The observers' initials in the last column, WC, D, M, L, H., WB, GEN, are those of Mr. Christie, Mr. Dyson, Mr. Maunder, Mr. Lewis, Mr. Hollis, Mr. Bowyer, and Mr. Niblett respectively. Fuller details of the observations will be published in due course in the Greenwich volumes for 1894 and 1895.